## REMARKS

This responds to the Office Action mailed on September 1, 2005.

Claims 14 and 22 are amended, no claims are canceled, and claims 37-49 are added; as a result, claims 14-49 are now pending in this application.

Claim 22 is amended to correct a typographical error. No new matter is proposed. This amendment is not made in response to any rejection under the Patent Act. This amendment does not effect the scope of the claim. Accordingly, claim 22 remains entitled to a full scope of equivalents.

Support for claim 37-40 may be found in the specification, for example, at page 2, lines 4-11 and page 11, lines 15-22. No new matter is introduced. Applicant respectfully requests reconsideration of the above-identified application in view of the remarks that follow.

Support for new claims 41-46 include previously pending claims 10-13. Support for new claims 47-49 include previously pending claims 14-17. Additional support is found in the specification as filed.

### *§103 Rejection of the Claims*

Claims 33-36 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Rasmussen et al. (U.S. 5,732,106) in view of Garza (U.S. 5,739,969). Applicant respectfully traverses.

The Office Action cites Rasmussen at col. 3, lines 50-53 as teaching the feature of "providing a switch start count value" as recited in claim 33. Applicant traverses this assertion. Rasmussen at col. 3, lines 50-53 states "Referring again to FIG. 2, the up/down counter 26 responds to a HIGH UP/DN signal by incrementing its output count each time it receives a subsequent incoming CLK1 pulse." This sentence does not teach or even suggest the feature of "providing a switch start count value" as recited in claim 33. As Rassussen and Garza, either alone or in combination do not teach all of the features of claim 33, applicant respectfully submits that a *prima facie* case of obviousness has not been made.

The Office Action cites Rasmussen at col. 4, lines 9-18 as teaching the feature of "resetting the switch count upon reaching the switch maximum count value" as recited in claim 33. Applicant traverses this assertion. Rasmussen at col. 4, lines 9-18 states

> The counter 26 is responsive to the rising edge of the incoming RESET signal pulse from the timing and control circuit 29 to provide a presettable count on output lines B0 to B4. This presettable count will be assumed in the exemplary case to be at the midpoint of possible counts, i.e. for a 5 bit counter the range is from 0 to 31 and the midpoint is 15. In addition, the counter 26 includes latching circuitry to stop upward and downward counts whenever the count reaches predetermined maximum and minimum values of 25 (11001) and 5 (00101), respectively.

This sentence does not teach or even suggest the feature of "resetting the switch count upon reaching the switch maximum count value" as recited in claim 33. As Rassussen and Garza, either alone or in combination do not teach all of the features of claim 33, applicant respectfully submits that a *prima facie* case of obviousness has not been made.

Applicant further refers to Rasmussen at col. 5 lines 18-47 an Figure 4F where it is described and shown that the counter does not reset when a switch count reaches a maximum and instead reverses to count down. Referring to Figure 4F, the maximum count is held from time T to 1.5T. The count is decremented from time 1.5T to 2.5T. At time 2.5T, the count is incremented to time 3.5T. The maximum count is held from time 3.5T to 4.5T. Rasmussen states that its presettable count is to be at the midpoint, i.e., 15. Accordingly, Rasmussen teache3s away from the presently claimed invention. Moreover, one of skill in the art would not have a reasonable expectation of success in combining Rasmussen and Garza to arrive at the present invention as defined by claim 33.

Claim 35 is believed to be allowable for substantially similar reasons as stated above with regard to claim 33 in that claim 35 recites, among other things, providing a switch start count value; providing a switch stop count value that may be less than the switch start count value; . . . resetting the switch count upon reaching the switch maximum count value; . . . and resetting the switch count to the switch start count value upon reaching the switch stop count." Moreover, claim 35 recites "limiting a switch count to a switch maximum count value of decimal 111." The Office Action does not discuss this feature. Accordingly, a *prima facie* case of obviousness has not been made.

Based at least on the above, applicant submits that claims 33-36 are allowable over Rasmussen and Garza. Reconsideration and allowance are requested.

Claims 10, 12-15, 17-22, 25 and 27-28 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Corbalis et al. (U.S. 5,359,592) in view of Shobatake et al. (U.S. 5,274,641). Applicant respectfully traverses.

Claim 10 recites, among other things, "wherein each serial input port and each serial output port are coupled to a programmable counter having programmable start and stop values, the programmable counter operable to increment the start value until the start value reaches a maximum count at which time the programmable counter rolls the start value over to a starting count and continues to increment the start value." Applicant can not find these features in the cited portion of Shobatake (Figs. 16A and 16B, col. 26, lines 3-26 and 40-49). The Office Action admits that Corbalis does not have these features. Moreover, Shobatake teaches away from the invention claimed in claim 10 where Shobatake (col. 26, lines 7-9) states "However, when the value of the counter is 0, no further decrement operation is performed." That is, the leaky bucket counter of Shobatake does not roll over when counting downward. Shobatake continues to teach away as it relies on the "leaky bucket" and does not teach or suggest "the programmable counter rolls the start value over to a starting count and continues to increment the start value" as recited in claim 10. Accordingly, Corbalis and Shobatake, either alone or in combination do not teach all of the features of claim 10. Reconsideration and allowance of claim 10 and its dependent claims 12-13 are requested.

Claim 14 as amendment recites, among other things, "a maximum count circuit coupled to the latches, the maximum count circuit rolling the count output to a start value when a maximum count is reached." Applicant can not find these features in the cited portion of Shobatake (Figs. 16A and 16B, col. 26, lines 3-26 and 40-49). The Office Action admits that Corbalis does not have these features. Moreover, Shobatake teaches away from the invention claimed in claim 14 where Shobatake (col. 26, lines 7-9) states "However, when the value of the counter is 0, no further decrement operation is performed." That is, the leaky bucket counter of Shobatake does not roll over when counting downward. Shobatake continues to teach away as it relies on the "leaky bucket" and does not teach or suggest "the maximum count circuit rolling the count output to a start value when a maximum count is reached" as recited in claim 14. Accordingly, Corbalis and Shobatake, either alone or in combination do not teach all of the

features of claim 14. Reconsideration and allowance of claim 14 and its dependent claims 15 and 17 are requested.

Claim 18 recites, in part, "the programmable counter . . . is programmed to increment the start value until the start value reaches the maximum count at which time the counter rolls over to the start count and continues to increment the start value until it reaches the stop value." Applicant submits that claim 18 is allowable over the combination of Corbalis and Shobatake for at least substantially similar reasons as stated above with regard to claim 10.

Claim 19 recites, among other things, "a compare circuit coupled to the stop count circuit and the latches that causes the latches to be reset based on the count output and values provided by the stop count circuit." Applicant can not find these features in the cited portion of Shobatake (Figs. 16A and 16B, col. 26, lines 3-26 and 40-49). The Office Action admits that Corbalis does not have these features. Moreover, Shobatake teaches away from the invention claimed in claim 19 where Shobatake (col. 26, lines 7-9) states "However, when the value of the counter is 0, no further decrement operation is performed." That is, the leaky bucket counter of Shobatake does not roll over when counting downward. Shobatake continues to teach away as it relies on the "leaky bucket" and does not teach or suggest "a compare circuit coupled to the stop count circuit and the latches that causes the latches to be reset based on the count output and values provided by the stop count circuit" as recited in claim 19. Accordingly, Corbalis and Shobatake, either alone or in combination do not teach all of the features of claim 19. Reconsideration and allowance of claim 19 and its dependent claims 20-21 are requested.

Claim 22 recites, among other things, "the programmable counter counting from zero to a maximum and programmed to increment the start value until the start value reaches the maximum at which time the start value rolls over the start address to the zero and continues to increment the start value until it reaches the stop value." Again, Corbalis and Shobatake, either alone or in combination do not teach or even suggest, a programmable counter that reaches a maximum and rolls over to the start value as recited in claim 22. Shobatake uses a "leaky bucket" that increments and decrements a value in the bucket but applicant can not find where the value in the bucket rolls over to a start value when a maximum value is reached. Accordingly, Corbalis and Shobatake, either alone or in combination do not teach all of the

features of claim 19. Reconsideration and allowance of claim 19 and its dependent claims 20-21 are requested. Allowance of claim 22 is requested.

*Allowable Subject Matter*

Claims 11, 16 and 26 were objected to as being dependent upon a rejected base claim, but were indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicant acknowledges the allowance and believes that this dependent claims are allowable with their respective parent claims.

Claims 23, 24 and 29-32 were allowed.

*New Claims*

New claims 41 and 44 include the subject matter that was indicated as allowable in claim 11. Accordingly, applicant submits that claims 41-46 are also allowable. Claim 47 includes the subject matter of claim 16, which was indicated as allowable.

## CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney at (612) 349-9587 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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KATE GANNON _____

Name

Signature